EPA COMMENTS ON THE PORTLAND HARBOR DRAFT REMEDIAL INVESTIGATION REPORT
GENERAL COMMENTS - July 16, 2010

No.	Topic	Comment
1	Indicator Chemicals	The RI Report focuses on indicator chemicals. EPA agreed to focus the presentation of site data on indicator chemicals for the ease of data presentation and clarity. However, the RI Report should clearly describe the basis for focusing presentation materials on a subset of chemicals at the Site and note that other chemicals are present at the site that pose potentially unacceptable risk to human health and the environment. The RI Report should describe how the results of the risk assessment and ARARs evaluation are used to identify the chemicals to be carried into the FS for the purpose of identifying COCs. Then the narrative can provide the rationale for why subsets of the larger contaminant list were developed for specific purposes in the RI Report.
2	Comprehensive Round 2 Site Characterization Summary and Data Gaps Report	The draft RI Report relies significantly on the Comprehensive Round 2 Site Characterization Summary and Data Gaps Report (Round 2 Report). It should be noted that the Round 2 Report was not approved by EPA. Although the RI Report does not need to repeat all information presented in previous documents, it needs to be the primary source for the description of the data collected, nature and extent of contamination, and risk assessments.
3		If the RI Report relies on any particular text, figure, appendix, or reference document found in the Round 2 Report or other preceding documents not formally approved by EPA and which is not placed into the RI Report, the RI Report must explicitly cite to the pages, figures, appendices, etc. of the previous report so that EPA can ascertain that it agrees and approves the reliance and use of such information described in the RI Report. Another way to address this issue is to place all relevant information from previous reports into the RI Report, thus, eliminating the need to provide explicit and complete cross references to the previous reports.
4		The Round 2 Report contained significant information that was not included in the RI Report, or was presented in a different, but less useful or complete manner. Examples of this information include: • A number of useful data presentations in the Round 2 Report were not included or presented with less complete information, including subsurface sediment data presentations and biota maps. These are called out in our specific comments.
5		• Section 4 on sources focuses on general information and fails to provide the necessary detail regarding specific sites, especially in the main text and summary sections. The presentation of the sources seems to be reasonable in a general and conceptual manner, as is that of the general pathway (overwater, erosion, etc.). However, it does not provide the reader with a clear summary of the connection between the major river contamination problems and the apparently connected nearby sites which are or were the sources of that contamination.
6		• The RI Report should present a summary of the main sources of contamination in the Study Area, the location of these sources and what the apparent upland sources are or were. In addition, set of simpler maps that summarizes the sources of contamination should be provided. For example, instead of multiple sets of maps on groundwater plumes with different depths and different contaminants (which the report admits may not be complete), it may be more useful to have a single map that shows all the groundwater plumes which have any contaminant above MCLs and AWQCs, across the entire Study Area, the related off-shore contamination areas, and the upland site names (similar to the present map 4.4-3h). A similar should approach be taken with each of the other media.
7		• The Draft RI Report should describe more clearly the suspected major sources of contamination at the site. In particular, the report should better summarize and highlight the actual sources and locations of contamination, both in the text and in associated maps. The draft RI fails to use the available data to describe the major source areas in a clear, concise and understandable manner. In particular, the RI Report must note that the scope of the Portland Harbor RI includes characterization of the entire hydrologic sub-basin, including the Study Area, the river, and its related upland areas, together with the different related media and contaminants (sediments, soils, surface water, groundwater, transition zone water, NAPL (non-aqueous phase liquids), etc.), and their dynamic interactions.
8		• The updated CSM in Section 10 did not present key information from the Round 2 Report regarding potential sources of contamination. In many cases, the information on potential upland sources is more general than what was previously provided in Section 11.3 (CSM for iAOPCs) section as part of the Round 2 report or upland site summaries. EPA recognizes that the RI report is not focused on iAOPCs, but the information provided in this section of the Round 2 report is useful in understanding potential sources and pathways of contamination that may have impacted adjacent areas in the river. The CSM should reference relevant information and detail from previous CSM updates.
9	Data Interpretation/Presentation	Many sections of the RI Report contain descriptions comparing quantitative results spatially and/or temporally. In many cases, terms such as “higher” or “less than” are used even though the comparison is based on the results of a statistical analysis. The RI Report should clearly note when the use of qualifiers such as “higher” or “less than” are based on a statistically significant difference and when they are not.
10		The RI Report also tends to combine data, calculations and interpretations into a single set of information. The RI Report should clarify which information is based on actual data and which information is based on an interpretation or extrapolation from the data. The RI

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		Report tends to mix analytical data (water, sediment, or other) with grouped calculations (averages, areas, etc.), secondary data (leaching tests from a group of area wide samples) and modeling extrapolated actual data. The end result is that the RI Report does not distinguish data from interpretations and extrapolations of the data. It is important that the RI Report account appropriately for the uncertainty in the interpreted results.
12	Groundwater	The RI documents present an impressive and broad set of different types of data that have been obtained and developed to understand the very large "Study Area." With the sediment data set, it should be possible to define where the major sediment contamination problem areas and depths are located. However, the RI has not done a similarly good job of compiling or obtaining sufficient groundwater and Transition Zone Water (TZW) for the Study Area. Specific examples include: • The draft RI Report does not describe groundwater as an exposure media, nor does it describe the risks posed to future drinking water users where groundwater exceeds non-zero MCLGs or MCLs. The RI Report should describe the ARAR screening process in addition to the baseline risk assessment, and should discuss the risks that are present based on ARAR screening, such as groundwater.
13		• The draft RI Report mischaracterizes the groundwater assessment sampling and makes unsupported conclusions about how many plumes are discharging to the river due to the lack of sufficient data. Given the lack of groundwater data on many sites, limited conclusions can be drawn from the samples that were taken in the river. The RI Report indicates that 113 sites have the likelihood of having contaminated groundwater. However, additional data were not collected further characterize these facilities as part of this RI. The RI Report must accurately describe the scope and purpose of the groundwater sampling that was done and provide a summary of the potential for groundwater discharges to the Portland Harbor site for the 113 sites identified as potentially having groundwater contamination.
14		• The RI Report should note that the groundwater pathway analysis focused on sites where existing information confirmed that contaminated groundwater was likely discharging to the river. The RI Report must state that the transition zone samples collected during this evaluation confirmed that contaminated groundwater is discharging to the river and does impact sediments and surface water. The RI Report needs to state that possible contaminated groundwater discharging to the river has not been fully characterized throughout the site, and that data gaps will need to be filled in during remedial design.
15		• The RI Report tends to discount groundwater sources at the site. For example, only a limited number of contaminated groundwater plumes discussed are discussed; many of the groundwater COCs are not discussed; and the baseline ecological risk assessments eliminated TZW data, compared to water TRVs, as a line of evidence for estimating risks to the benthic community. For each potential source area (upland and in-river sources), the entire combination of groundwater, sediment, and soil contaminants should be fully evaluated.
16		• It is not clear whether many of the LWG "upland site summaries" have been revised based on EPA comments submitted and updated for some of the major sites. Using older information may miss many plumes that may have been better characterized since that work was done. It is likely that, for example, sites such as Arkema, Rhone-Poulenc, GASCO, Siltronic, U.S. Moorings, Terminal 4, Oregon Steel Mills (and the related Terminal 5), and Schnitzer adjacent to the International Slip have had significant changes in what has been found with additional site characterization and remedial activities.
17		• The RI Report does not account for groundwater plumes which are not located in sites adjacent to the river that may continue to impact the river through inflow to the stormwater discharge pipes, or the pipe bedding, and other related pathways. Note that this is the case in sites adjacent to the International Slip and probably in many other areas if these sites had been considered as sources and the entire area had been characterized more completely. This issue has already been documented in the Arkema and Rhone Poulenc areas, where the stormwater pipes have had to be relined. This issue concerns both groundwater and stormwater system connections, and not simply the proximity of contaminant plumes to the river.
18		• The report needs to acknowledge that the groundwater evaluation is further limited by not following known plumes from upland sites and sampling those plumes where they would discharge into the river. The TZW samples were collected in areas where groundwater contamination was likely based on an evaluation of groundwater discharge areas within the river and an assessment of upland groundwater contaminant plumes rather than tracking groundwater contamination in three dimensions from the source to the discharge zones in the river. The RI Report should compare the TZW sampling conducted for the Arkema and Siltronic sources and flow paths into the river (which did find the groundwater discharges, TZW impacts, and sediment problem areas) to the samples done in many of the other TZW areas; while this provides documentation of TZW contamination, it does not document the flow paths or show whether the contamination is at the center of those plumes or at the edges (for example the results from the sampling for Rhone Poulenc plumes under the railroad bridge area, or some of the bulk fuel facility sampling locations). The conclusion should be that TZW has been found to be impacted in many locations, but clearly identify the limitations of the characterization process.
19		• The draft RI Report does not describe groundwater as an exposure media, nor does it describe the risks posed to future drinking water users where groundwater exceeds

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		non-zero MCLGs or MCLs. The RI Report should describe the ARAR screening process in addition to the baseline risk assessment, and should discuss the risks that are present based on ARAR screening, such as groundwater.
20	Modeling	Agency comments on the HST model (provided July 2009) recommended changes that may yield significantly different results and that will likely require recalibration as well as re-running the validation and the sensitivity analysis. The next draft of the RI should incorporate the agencies' recommended changes from July 2009 and any subsequent changes based on our current discussion regarding the contaminant fate and transport model. EPA expects that a revised HST/F&T model will be included with the draft FS.
21	Section 11	Section 11 is a repeat of material presented elsewhere in the Draft RI Report. Section 10 already summarizes all the preceding sections into a conceptual site model, and the executive summary already is a shorter, more reader-friendly summary of the whole document. As a result, this section should be – deleted with the exception of Section 11.11 which focuses on conclusions and next steps and should become the conclusion section of the RI Report.